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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/538,893	11/15/2005	Martin Kunz	11/2-22989/INP 2/PCT	5149	
324	7590	11/19/2009	EXAMINER		
JoAnn Villamizar		HORNING, JOEL G			
Ciba Corporation/Patent Department		ART UNIT		PAPER NUMBER	
540 White Plains Road		1792			
P.O. Box 2005					
Tarrytown, NY 10591					
NOTIFICATION DATE		DELIVERY MODE			
11/19/2009		ELECTRONIC			

## Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/538,893	KUNZ ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	JOEL G. HORNING	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 07 September 2007.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 and 7-34 is/are pending in the application.
- 4a) Of the above claim(s) 5-17,22-25,33 and 34 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,18-21 and 26-32 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-04-2009</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

### ***Status of Claims***

1. In the response of 07-15-2009, applicant has: amended claims 1, 7-17 and 21; cancelled claims 2-6 and 35. Claims 7-17, 22-24 and 33-34 are currently withdrawn. Claims 1, 18-21 and 25-32 are currently undergoing examination on the merits.

### ***Election/Restrictions***

2. Claims 7-17, 22-24 and 33-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 07-21-2009.

Applicant's traverses arguing that the process of forming a functional layer (of the amended claims) links the different species. However, as shown by the previous rejection, the amended process of forming a functional layer (e.g. strongly adhering, though it will have a hydrophilic/hydrophobic function as well, etc.) and the recited steps were known by Bauer et al, even including acrylic acid functional groups which would affect the hydrophilicity/hydrophobicity of the resulting layer, so the restriction is maintained and made final.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. **Claims 1, 18-21, 25-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al (WO-00/24527, as literally translated in US 6548121).

Bauer et al (hereafter referred to as '121) teaches a process for producing a coating on an organic or inorganic substrate. This method comprises: a low temperature plasma treatment is carried out on the substrate ('121 step "a") and in '121 step "c1", the substrate is coated with composition comprising at least one ethylenically unsaturated monomer or oligomer and is irradiated with electromagnetic waves causing the coating to exhibit the at least the desired property of being cured (col 1, line 50 through col 2, line 8). '121 further teaches using acrylic acid as the ethylenically unsaturated compound, which has an acid group (col 16, lines 9-14), and which is a hydrophilic group which will have an effect on the hydrophilicity of the coating. '121 further teaches that the composition preferably comprises at least one photoinitiator for curing by UV/VIS radiation (col 17, lines 49-52).

'121 does not teach if the mixture of ethylenically unsaturated compound(s) with photoinitiator compound(s) of its step "c1" is in the form of a melt, solution, suspension or emulsion.

However, '121 does teach that the mixture can be applied by spraying (col 15, lines 20-27) and teaches that for spraying it is suitable for photoinitiators to be in the form of a melt or solution (col 22, lines 40-43)

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to place the mixture in the form of a melt or solution since it was a form known to the art to be suitable for spraying photoinitiator mixtures and would produce predictable results (**claim 1**).

4. Regarding **claims 18-20**, '121 teaches polyolefins (e.g. polypropylene) as desired substrates for the process (col 3, lines 12-22).
5. Regarding **claim 21**, '121 teaches using benzophenones for the photoinitiator (col 17, lines 49-65).
6. Regarding **claim 25**, '121 teaches using air as the plasma gas (col 2, lines 20-25).
7. Regarding **claims 26 and 27**, which claim different concentrations of the components of the mixtures. MPEP 2144.05 (II) states: "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. [W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."

8. Regarding **claim 28**, '121 teaches adding "additives customary in the art" to the composition (col 21, lines 57-60).
9. Regarding **claim 29**, '121 teaches applying the coating to a thickness of between 1 to approximately 100 microns (col 19, lines 52-57), which is encompassed by applicant's claimed range.
10. Regarding **claim 30**, '121 teaches performing the irradiation step with UV/VIS radiation col 2, lines 5-9), and further teaches that UV/VIS radiation is to be considered between 250 nm and 450 nm (col 17, lines 52-55), which is encompassed by applicant's claimed range.
11. Regarding **claim 31**, '121 teaches irradiating the coated substrate through a mask, so only certain areas are exposed to the irradiation (col 3, lines 1-7).
12. **Claim 32** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al (US 6548121) as applied to claim 1 above, and further in view of Kohler et al (US 6251963).

'121 teaches that the method is used for forming photoinitiator layers for image forming resist coatings (col 23, lines 10-16), but does not say how such images are formed by resist technology.

However, '963 further teaches that images are formed by resist technology by covering parts of the wet or dry resist layer with a photomask and then irradiating the layer with electromagnetic waves to crosslink a pattern in the resist (the UV/VIS exposure step) and removing the unexposed (not crosslinked) regions of the photoresist by using a solvent (col 21, lines 13-23).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to modify '121 to cover the deposited structure of a photoinitiator layer and a monomer or oligomer containing layer with a photomask so that the irradiation step would only crosslink a pattern in the coating and then to remove the non-crosslinked regions of the coating (photoinitiator and monomer/oligomer) by using a solvent, in order to form an image in the coating as desired by '121. Using this method is obvious, because it was a known method for producing an image in a photoinitiator layer and would produce predictable results (**claim 32**).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**13. Claims 1, 18-21 and 25-32** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of U. S. Patent No.

7455891 as applied in the double patenting rejection above further in view of WO-00/24527, as literally translated in US 6548121.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the '891 claims are sufficient to anticipate species from the markush groups in the claims: such as where the claim 4 R<sub>6</sub> group is a hydroxyl group (a hydrophilic alcohol group) and when the photoinitiator is a benzil ketal. Additionally, the photoinitiator compounds are in solutions (claim 6), they do have functional groups and the result is a substrate with desirable surface properties. Furthermore: MPEP 2144.05 (II) states that "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."

Though '891 does not claim the functional groups of claim 4, the substrate of claims 18-20 or the additives of claim 28, as described in the '121 rejections of those claims, it would have been obvious to a person of ordinary skill in the art at the time of invention to perform those claimed limitations since they were known to the art to be suitable and would produce predictable results.

**14. Claims 1, 18-21 and 25-32** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of

copending Application No. 10556609 as applied in the double patenting rejection above further in view of WO-00/24527, as literally translated in US 6548121.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the '609 claims are sufficient to anticipate species from the markush groups in the claims: such as where the claim 2 R<sub>1</sub> group is a hydroxyl group (a hydrophilic alcohol group). Additionally, the photoinitiator compounds are in solutions (claim 7) and do have functional groups and the result is a substrate with desirable surface properties. Furthermore: MPEP 2144.05 (II) states that "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.'"

Though '609 does not claim the functional groups of claim 4, the substrate of claims 18-20, the photoinitiators of claim 21 or the additives of claim 28, as described in the '121 rejections of those claims, it would have been obvious to a person of ordinary skill in the art at the time of invention to perform those claimed limitations since they were known to the art to be suitable and would produce predictable results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**15. Claims 1, 18-21 and 25-32** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of copending Application No. 10566741 as applied in the double patenting rejection above further in view of US 6548121.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the '741 claims are sufficient to anticipate species from the markush groups in the claims in steps "a" through "c" : such as when the photoinitiator is a benzoin, which has a hydrophilic alcohol functional group. Additionally, the photoinitiator compounds are in solutions (claim 7) and do have functional groups and the result is a substrate with desirable surface properties. Furthermore: MPEP 2144.05 (II) states that "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.'"

Though '741 does not claim the functional groups of claim 4, the substrate of claims 18-20 or the additives of claim 28, as described in the '121 rejections of those claims, it would have been obvious to a person of ordinary skill in the art at the time of invention to perform those claimed limitations since they were known to the art to be suitable and would produce predictable results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**16. Claims 1, 18-21 and 25-32** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10566743 as applied in the double patenting rejection above further in view of WO-00/24527, as literally translated in US 6548121.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the '743 claims are sufficient to anticipate species from the markush groups in the claims in steps "a" through "c" : such as when the photoinitiator is a benzoin, which has a hydrophilic alcohol functional group. Additionally, the photoinitiator compounds are in solutions (claim 7) and do have functional groups and the result is a substrate with desirable surface properties. Furthermore: MPEP 2144.05 (II) states that "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. '[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."

Though '743 does not claim the functional groups of claim 4, the substrate of claims 18-20 or the additives of claim 28, as described in the '121 rejections of those claims, it would have been obvious to a person of ordinary skill in the art at the time

of invention to perform those claimed limitations since they were known to the art to be suitable and would produce predictable results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**17. Claims 1, 18-21 and 25-32** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 10/538890 as applied in the double patenting rejection above further in view of WO-00/24527, as literally translated in US 6548121.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the '890 claims are sufficient to anticipate species from the markush groups in the claims in steps "a" through "c" such as when the photoinitiator is a benzoin, which has a hydrophilic alcohol functional group, and when the substrate is a polyolefin. Additionally, the photoinitiator compounds are in solutions and do have functional groups and the result is a substrate with desirable surface properties.

Though '890 does not claim the functional groups of claim 4, as described in the '121 rejections of those claims, it would have been obvious to a person of ordinary skill in the art at the time of invention to perform those claimed limitations since they were known to the art to be suitable and would produce predictable results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**18. Claims 1, 18-21 and 25-32** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/530614 as applied in the double patenting rejection above further in view of WO-00/24527, as literally translated in US 6548121.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the '614 claims are sufficient to anticipate species from the markush groups in the claims in steps "a" through "c" : such as when the photoinitiator is a benzoin, which has a hydrophilic alcohol functional group, and when the substrate is a polyolefin. Additionally, the photoinitiator compounds are in solutions and do have functional groups and the result is a substrate with desirable surface properties. MPEP 2144.05 states: "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists."

Though '614 does not claim the functional groups of claim 4, as described in the '121 rejections of those claims, it would have been obvious to a person of ordinary skill in the art at the time of invention to perform those claimed limitations since they were known to the art to be suitable and would produce predictable results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Response to Arguments***

19. Applicant's arguments filed 07-15-2009 have been fully considered but they are not persuasive.

On page 8 of the remarks, applicant argues that since Bauer is directed to "a method of producing strongly adherent coatings on organic or inorganic substrates" that it does not form "a functional layer on a substrate." However, as discussed in the previous rejection, strongly adhering is a function that the Bauer reference teaches.

Furthermore, hydrophobicity/hydrophilicity is merely a property of a layer due to its surface energy with respect to water. All layers have a certain hydrophobic/hydrophilic functionality. The properties/functions of any layer, such as hydrophilicity/hydrophobicity, are affected (controlled) by the functional groups present in said layer.

As applied in the rejection, Bauer et al teaches using acrylic acid groups in the unsaturated compound, which applicant teaches has an effect on the hydrophilicity/hydrophobicity of the resulting layer. Thus, as applied in the rejection, in the operation of Bauer et al, the acrylic acid groups that are present in the unsaturated compound will have an effect (a control) on the hydrophilicity/hydrophobicity of the resulting layer and meet the claim limitations.

Though it was not utilized directly in the current rejection, it is further noted that that Bauer et al is actually interested in the hydrophilicity, colors and other properties of the produced layer, which it teaches are controlled by the formulation of the composition (col 3, lines 1-11).

Regarding the double patenting remarks, it is noted that applicant wishes to put off resolution of these rejections until the other rejections have been resolved. Applicant can do this, however, the rejections will continue to be present in future office actions until they are resolved. Applicant argues that the features of claim 6 have been incorporated into claim 1. The argument is unconvincing because the features of claim 6 are recited in the alternative only, and are not required by claim 1.

***Conclusion***

20. No current claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOEL G. HORNING whose telephone number is (571)

270-5357. The examiner can normally be reached on M-F 9-5pm with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael B. Cleveland can be reached on (571)272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. G. H./  
Examiner, Art Unit 1792

/Michael Cleveland/  
Supervisory Patent Examiner, Art Unit 1792